

CLAIMS

1. Faraday rotator for a Faraday isolator with an input polarizer, with an output polarizer, with a roller-shaped optical crystal (13) that is arranged therebetween and that is arranged symmetrical to its axis of symmetry (x), with a
5 right hollow cylinder (11) that surrounds this and has a hollow space made of a permanent magnetic material, which cylinder is axially magnetized and the magnetic field (B) of which extends in said hollow space (12) approximately parallel to said axis of symmetry (x) that runs in only one direction from the north pole (N) to the south pole (S), and with terminal magnets (16, 17) attached to each of the two end
10 faces (14) in the plane perpendicular to the y- and z-directions of said axis of symmetry (x), each of which is embodied as a hollow right cylinder and has a through-aperture (18) in the extension of said axis of symmetry (x), characterized in that each terminal magnet (16, 17) is radially magnetized at least by region largely with regard to said axis of symmetry (x), in that the one of said two terminal magnets
15 (16) is magnetized radially from interior (N) to exterior (S) and the other terminal magnet (17) is magnetized radially from exterior (N) to interior (S) and in that said hollow cylinder (11) at its north pole (N) is adjacent to said terminal magnet (17) that is magnetized from interior to exterior and at its south pole (S) is adjacent to said terminal magnet (16) that is magnetized from exterior to interior (Fig. 3).

2. Faraday rotator in accordance with claim 1, characterized in that each terminal magnet (16, 17) comprises two or more radiation-symmetrical parts (19 and 20) that are largely radially magnetized with regard to said axis of symmetry (x) at least by region.

5 3. Faraday rotator in accordance with claim 2, characterized in that said parts (19, 20) of said terminal magnets (16, 17) together form a right circular hollow cylinder.

4. Faraday rotator in accordance with claim 3, characterized in that said parts (19, 20) are embodied largely sector-shaped in cross-section along the y/z axis
10 with a large radius and lacking an interior region, e.g., in the shape of a sector with a small diameter for forming said through-aperture (18) (Fig. 6).

5. Faraday rotator in accordance with any of claims 1 through 4, characterized in that said parts (19, 20) of said largely radially magnetized terminal magnets (16 and 17) also possess a component in the direction of said axis of
15 symmetry (x) (Figure 7b).